

ABSTRACT

GAS DETECTION METHOD AND GAS DETECTOR DEVICE

The gas detector device comprises at least a VCSEL source (34, 36) and at least a light sensor (54, 56) for detecting a light beam (50, 52) having passed through a sample chamber (48) containing a given gas to be detected. The sensor is a photodiode in a first embodiment and its detection signal is time derivated by an  
5 electronic derivator (64) and then provided to two lock-in amplifiers (84, 86) in order to generate a F-detection and a 2F-detection, F being the frequency of a wavelength modulation of the source, and thus to provide two corresponding measuring signals the division of which gives a precise value of the gas concentration. In a second  
10 embodiment, the source is a pyroelectric sensor which directly provides a detection signal proportional to the time derivate of the light beam incident on this sensor. In this last case, the electronic derivator is thus eliminated.

Figure 13